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DEVELOPMENT OF MANUFACTURING INDUSTRIES IN AUSTRALIA

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1788-1820: THE FIRST YEARS OF SETTLEMENT

In the early years of Australia's settlement, there was little scope for industrial or commercial enterprises. The government, as both main producer and main consumer, established work-shops in order to produce the basic necessities of life in a small, isolated community - flour salt, bread, candles, leather and leather articles, blacksmith's products, tools and domestic items.

With agriculture languishing and commerce in its infancy, private ventures prospered little. The volume of domestic demand was too small to serve as a firm basis for economic development and, generally, was met by imports.

The lack of skilled labour and the small number of free settlers limited severely both the availability of investment funds and business skills generally.

1820-1850: THE PASTORAL AGE

In the years between 1820 and 1850 the pastoral industry exerted a dynamic influence on economic expansion and by 1850 was supplying well over 50 per cent of the British market for imported wool.

The growth of the wool industry brought great advances in the rest of the economy. Local manufacturing industries were established in response to new market opportunities, though production was geared to the growing agricultural output and, also, was limited to products which were naturally protected from imports.

During the 1840s a severe and protracted depression in the pastoral industry and in the economy as a whole seriously interrupted Australia's economic expansion. Changes in economic conditions in Britain resulted in falls in export prices and reduced capital inflow to Australia. The rate of increase in the production of wool slackened and at the same time the population increase declined.

Despite the depression of the pastoral industry in the 1840s, New South Wales experienced strong industrial growth between 1820 and 1850, arising from a number of factors. These

included the rapidly-growing population, which rose from under 13,000 in 1815 to over 180,000 by 1851, greater diversity and level of skills with the influx of free settlers, and the outward spread of settlement. In turn these led to substantial increases in the demand for food and drink, transport equipment, construction materials and other implements.

In other colonies manufacturing developed as circumstances permitted. In Tasmania an emphasis on processing primary produce, a limited local market, a shortage and higher cost of skilled labour and the more immediate rewards from sheep farming and commerce combined to slow the pace of industrial development. Flour milling, ship building and metal working activities were established nevertheless.

Despite its smaller population, industry developed further in South Australia than in Victoria, which was showing few signs of specialisation at this time. Flour milling, metal smelting, brewing and tanning were established in South Australia, and some success was also achieved in the design and manufacture of agricultural equipment. Neither Western Australia nor Queensland experienced any significant industrial activity during this period.

The 1850s: IMPLICATIONS OF THE GOLD RUSH FOR MANUFACTURING

Gold worth $125 million was mined between 1851 and 1861, surpassing wool as the great export earner - a position it maintained until the 1870s. Banking and commerce expanded rapidly as gold became the nation's currency; financing improved shipping facilities, railways, telegraphs and other amenities. The demand for goods and the clamour for swift passage for eager migrants brought new prosperity to British and American shipyards and revived allied and local trades. For their role in stimulating confidence and activity in a depressed era, the gold fields have been described as 'huge public works'.

1860-1900: ECONOMIC GROWTH LEADING TO STRUCTURAL IMBALANCE AND THE DEPRESSION OF THE 1890s

In the years between 1860 and 1900 Australian economic growth was rapid and generally well sustained.

In Victoria, where the gold rush had led to an annual population growth of 19 per cent between 1851 and 1860, there was a rapid increase in factory activity. The building industry was thriving and an increasing demand for gold-mining equipment boosted Victoria's metal working trade. Government incentives encouraged new activities, speculative finance became more available and there was an increase in public works; all were instrumental in fostering industrial growth in the colony.

A protective tariff system against overseas imports was first introduced in Victoria in 1867 in order to encourage the manufacturing industry, as surplus labour became available after the gold rush. In 1871 and again in 1877 there were substantial increases in the tariff, the revenue raised being used primarily to finance public works expenditure.

In New South Wales industry grew at a steady pace and by 1877-78 factory workforce structures in New South Wales and Victoria were similar. Clothing and footwear, metals, engineering and transport, and the food, drink and tobacco industries were major employers in both colonies.

Tasmania and South Australia both experienced long-run declines in manufacturing between 1860 and 1890, but in Queensland and Western Australia the opposite was the case.

Overall, manufacturing demonstrated long-run growth during this period with factory employment increasing from 11,000 in 1851 to 149,000 in 1891 and output increasing from 4.9 per cent of total Gross National Product (GNP) in 1861 to 10.9 per cent in 1890. It was then in fourth place

behind services, pastoral activities and construction.

Public companies were establishing multiple branches, industrial activity was spreading to non-metropolitan areas and overseas investors were sharing an interest in activities such as timber milling and meat processing. As well, governments were increasing their own efforts, organising and subsidising the processing industry in recognition of the importance of trade.

Increasing activity in public works, especially government railway construction, played an important role in encouraging expansion in manufacturing during the 1870s. In the second half of the 1880s, capital inflow increased dramatically with overseas loans from Britain underpinning the construction of the railways. In 1890 the Baring crisis prompted Britain to reassess her overseas investments, and in November of that year there was an abrupt halt to the growth in capital inflow which in turn brought railway construction to an unexpected halt.

The process of economic change between 1860 and 1890 left industry's share of total investment unchanged. Manufacturing enterprises remained essentially small-scale, labour intensive and utilising only the simplest technology. Investment in railway building, the pastoral industry, and construction, all of which were funded primarily from overseas sources, ceased with the onset of the depression of the 1890s. The affluence of the previous decades was at an end.

1901-1930: FROM FEDERATION TO DEPRESSION

Though the economy recovered rapidly from the depression of the 1890s, the rate of growth for Gross Domestic Product (GDP) in the first thirty years of Federation was significantly lower than it was during the previous thirty years.

Between 1901 and 1930 there were major changes in the industry environment. By eliminating customs barriers between the States, Federation encouraged trade and assisted the further expansion of industry. Though total manufacturing employment had increased from 190,000 in 1903 to 328,000 by 1913, the sector was still relatively small. In 1911 it contributed only 13 per cent of GDP, behind services (55%) and the rural sector (19.9%) and had a limited heavy industry base. Its growth had been supported by tariffs - the Lyne Tariff of 1908 established protection as part of Federal Policy.

The development of Australian manufacturing industry received some further impetus from increases in customs duties in 1911 and 1914, and then grew more strongly in the environment of World War I.

The opening of the steel works at Newcastle during World War I allowed the growth and diversification of basic metal-working industries. However, the shortage of essential capital equipment limited expansion to a narrow range of industrial products.

The years following World War I saw the manufacturing industry expand in an atmosphere of expansionary fiscal policy, high prices for wool and wheat, and with a population which increased from four to six million between 1910 and 1930.

The growth of the manufacturing industry held a promise of employment for a rapidly growing population. In addition, if Australia was to achieve a high degree of self-sufficiency then the existing industrial base needed to be broadened, and the tariff was seen as an important instrument in the achievement of this aim. In 1921, in an endeavour to assist the development of existing and new industries, protection was increased under the Greene Tariff. In the same year, the Tariff Board was established to advise the government on Tariff matters. Protection policy received further attention with the establishment of the Brigden Committee in 1927 - set up to conduct an economic inquiry into the tariff. Both bodies recommended that further protection be given only after the most careful consideration. Despite the warning implicit in the

recommendation, protection was increased substantially over the decade in order to assist industry development in the face of growing unemployment and external payment difficulties - problems destined to increase during the Depression.

By 1929, 440,000 people were employed in manufacturing - 34 per cent above the 1913 level. Until that time more than 60 per cent of manufacturing employment was concentrated in metals and machinery, processed foods, and clothing and textiles, with the latter leading the field in terms of size. However, within manufacturing, average employment was declining steadily in clothing and textiles and rising in metals and machinery and by 1928-29, this latter group had become a major contributor to both the employment and production of the manufacturing sector.

Within the metals and machinery sector, production of motor vehicles and associated activities accelerated during this period, in response to the expanding demand for consumer durables which characterised the 1920s. Holden's Motor Body Builders were well established, the Ford Motor Company opened a large motor body assembly plant at Geelong in 1925, while General Motors commenced operations in Adelaide the following year.

In summary, the increased activity of this period saw Australia's productive capacity significantly broadened under the stimulus of wartime shortages and subsequent tariff protection. But despite the great expansion of output and employment, many of the new industries were able to satisfy only a small proportion of domestic demand.

1930-1945: DEPRESSION TO WAR'S END

The Depression of the 1930s had its origins overseas although the structural weaknesses of the Australian economy made some contribution. Manufacturing growth in Australia was severely checked in the early years of the decade despite large and widespread increases in ordinary tariff rates in 1930 (the Scullin Tariff).

Though the sector's share of total employment had fallen from 22 per cent in 1920-21 to 18 per cent in 1930-31, manufacturing led the recovery in total employment, accounting for 25 per cent by the start of World War II. Domestic demand continued to grow. Skill levels of the labour force were increasing and overseas enterprises were bringing in new capital. Just as important were the new and sophisticated techniques being introduced, which included the processing of cement and rubber. In 1939 major industries included iron and steel, non-ferrous metals, machinery and engineering, electronic and electrical equipment, motor vehicle assembly and parts, food processing, textiles and clothing, wood products, and printing and publishing.

Some of the pre-1930 trends were continued in the following decade. Industrial metals, machines and conveyances continued to increase their share of manufacturing employment (32%) and value added (32.5%), whilst clothing, food, drink and tobacco continued to decline. By 1938-39 the manufacturing sector's contribution to GDP had reached 19 per cent, a level almost equal to the rural sector's 20 per cent.

When World War II broke out in 1939 the Australian manufacturing sector was sufficiently developed and diversified to respond to the demand for war materials and equipment. Industrialisation proceeded apace as Australia switched her resources to wartime manufacturing production. Key industries expanded and new ones developed rapidly to produce munitions, ships, aircraft, new kinds of equipment and machinery, chemicals, textiles and so on. By 1940-41 manufacturing's share of employment, at 25 per cent, had overtaken the rural sector's share and, combined with the efflux of men and women from the labour force to the armed services, contributed to a sharp fall in unemployment. The resultant acquisition of new skills and development of new strategies and techniques, with subsequent diversification of scientific and technical knowledge, established a firm basis for the growth of the post-war era.

1945-1968: POST-WAR YEARS OF PROSPERITY

After World War II Australia entered an era of sustained expansion, with all sectors experiencing growth. Large-scale immigration, increasing availability of raw materials after wartime shortages, technical and scientific progress, and capital inflow all contributed to growth.

Government intervention in the working of the economy became more pronounced, with macro stabilisation policies targeting specific goals such as full employment, growth and economic development. In addition, influence was brought to bear on the location of industries through government regional development policies. After 1945 it was agreed that State governments should promote decentralisation by offering incentives to certain industries, while the Commonwealth further assisted decentralisation through its allocation of defence activities and by encouraging migrants and overseas firms to establish themselves in provincial areas.

With the manufacturing sector seen as a vital element in this process of national development and growth, the protection of the pre-war tariff was continued, and the import licensing restrictions and controls retained until 1960 (apart from a short break after the Korean War wool boom). These measures undoubtedly allowed the domestic manufacturing sector to capture an increased share of the domestic market, reap economies of scale, and improve productivity to more internationally competitive levels.

In this environment, the manufacturing sector made the transition to peacetime activities without undue difficulty, but it was not until the early 1950s that labour and material shortages began to subside, and bottlenecks disappear. Larger-scale immigration, private capital investment and government works, particularly in infrastructure, set the tone for the remainder of the era and allowed rapid expansion. By 1960, manufacturing's share of GDP and employment had reached historic highs, and Australia's industrial base could claim to have reached maturity.

In this period, significant structural change occurred within the manufacturing sector itself. In the traditional, more labour intensive industries such as food, clothing, sawmilling and wood products, the relative share of employment and production declined whilst the more capital intensive groups such as chemicals, electrical goods and industrial metals, machines, and conveyances steadily increased their shares. The growth of these industries was tied to their increasing comparative advantage within the sector, and to the expansion of the domestic market due to rising incomes, high rates of population increase and the unsatisfied demands of the previous era for consumer goods.

The developing maturity of the motor vehicle industry created further demands for steel, glass, plastics and rubber. By 1960, the first indigenous vehicles had been produced and one person in sixteen in the workforce was employed in the manufacture, distribution or servicing sector of this industry.

The petroleum refining industry also grew to prominence in the 1950s to service the needs of both motorists and industry. In the 1960s, new petrochemical complexes using advanced technology were built to transform the by-products of the oil refining process to a variety of petrochemicals and synthetic materials. This basic chemicals industry allowed domestic production of inputs for the further development of the plastics, synthetic fibres and rubber industries and the chemicals, fertilizer, paint, adhesives and sealant industries. Demand for other consumer and producer goods arising in these years provided a challenge for the development of our electronics industries.

The structural changes which occurred during this time were extensive but, when Australia's manufacturing performance is compared with that of other developed countries over a similar time frame, Australia's record was not so impressive, particularly in the 1960s. By this time, the rapid growth afforded by the domestic market in the 1950s had ended, and, although

manufacturing exports did increase, the rate of growth was small and compared poorly with other developed countries.

1968-1979: YEARS OF CONTRAST

The era of the 1970s saw a sharp transformation in the world economic environment, from the relative stability and high growth of the post-war period to the inflation and low growth which followed the oil price shocks of the 1970s.

The onset of the oil price rises in 1973-74 led the world into recession and added greatly to inflation, with similar effects on most OECD countries - slower growth of GDPs, employment and trade. This combination of slow growth and inflation became known as stagflation, and affected all sectors of the Australian economy.

GROSS DOMESTIC PRODUCT AND EMPLOYMENT, BY SECTOR: AUSTRALIA

	Proportion of total GDP at factor cost (a) attributable to each sector				**Proportion of employment in each sector**			
Year	Rural	Mining	Manufacturnig	Services	Rural	Mining	Manufacturing	Services
1900-01	19	10	12	59	n.a	n.a	n.a	n.a
1910-11	26	6	13	55	25	6	21	48
1920-21	28	3	13	56	24	3	22	51
1930-31	21	2	16	61	26	2	18	54
1940-41	(b)20	(b)3	(b)19	(b)58	19	2	25	54
1950-51	31	2	23	44	14	2	29	55
1955-56	16	2	28	54	13	2	28	57
1960-61	13	2	29	56	11	1	28	60
1965-66	10	2	27	61	9	1	26	63
1970-71	7	4	25	64	7	2	25	66
1972-73	8	4	24	64	7	1	24	68
1974-75	6	4	22	68	7	1	22	70
1976-77	5	4	21	70	7	1	21	71
1978-79	7	4	19	70	7	1	20	72
1980-81	6	4	20	70	7	1	20	72
1982-83	4	5	18	73	7	2	18	73
1983-84	5	5	18	72	6	2	18	74
1984-85	5	5	18	72	6	1	18	75

(a) At current prices. (b) 1938- 39.
Source: Industries Assistance Commission, Structural Changes in Australia, AGPS, Canberra, 1977.

What little employment growth there was in this period was dominated by the service sector. While levels of employment changed little in the mining sector, both the manufacturing and the rural sectors experienced substantial declines in employment levels between 1973 and 1980 (by 80,000 and 15,000 respectively). Manufacturing, as the hardest hit sector, saw its sectoral share of total employment fall from 25 per cent in 1970 to slightly less than 20 per cent in 1980, against a background of depressed growth in other sectors.

A number of changes occurred to reduce the competitiveness of local industry in the early 1970s. First, the world wide disturbances in exchange rates following the collapse of the Bretton Woods agreement, increases in oil and other commodity prices, and increasing competition from the newly-industrialised countries in Asia served to undermine Australia's existing comparative advantages. Second, domestic developments such as the move toward equal pay for women, sharp rises in real wage costs generally and tariff cuts compounded the problem, causing a squeeze of rapidly escalating costs and intensified import competition.

Quantitative import restrictions were imposed on those labour intensive goods where domestic employment levels were being severely affected and where overseas competition was rapidly undercutting domestic producers in terms of costs. These were predominantly the textiles, clothing, footwear, automotive and whitegoods industries.

Initially instituted as temporary measures to facilitate adaptation, import quotas were increasingly seen as indispensable to the survival of some local industries. They served to offset to some degree the overall decline in levels of assistance - estimated average effective rates of assistance to manufacturing fell from 36 per cent to 26 per cent in the years between 1968 and 1979, largely as a result of the 25 per cent general tariff cut of July 1973. More importantly, the quota restrictions undermined the reductions in dispersion of assistance across the sector which had been achieved by tariff reductions.

In addition to specific protective policies, the Government instituted an exchange rate devaluation in 1976 which helped to restore competitiveness to the manufacturing sector, but subsequent erosion due to inflation differentials, and reluctance to initiate further devaluation in order to 'fight inflation first', reduced the benefits to industry as the decade wore on.

In the late 1970s expectations of a 'resources boom' gained momentum, partly fuelled by the sustained high prices of energy (such as oil and coal). Investment attention thus swung to the mining sector, reducing the ability of the manufacturing sector to rationalise and make adjustments for a changed world economic environment.

1980-1986: declining terms of trade

Despite significant rationalisation, the manufacturing industry has responded to economic recovery more slowly than other sectors. Its shares of total GDP and employment declined further in the early 1980s, with both falling to 18 per cent in 1983. In 1983-84 the food, beverages and tobacco industry held the largest share of manufacturing output (22%) followed by transport equipment (10%). In 1983-84 the greatest share of manufacturing employment was in food, beverages and tobacco (17%), followed by other machinery and equipment (13%). The textiles, clothing and footwear industry held the smallest share of manufacturing output and employment at this time with 7 per cent and 10 per cent respectively.

Industries based on Australia's natural resources which are capital or skill-intensive, or based on new technology, have continued to experience relatively healthy growth. In the period 1978-79 to 1983-84 the paper, paper products, printing and publishing industry experienced the highest trend annual growth followed by chemical, petroleum and coal products.

Poor prices and market prospects for Australia's traditional exports of agricultural commodities

and minerals together with a high level of imports saw a growing current account deficit in the mid-1980s. The need to restructure Australia's export profile if the balance of payments is not to be a continuing constraint on economic growth and, hence, rising living standards, is increasingly clear and acknowledged by most of the community. Australia needs to shift economic resources into the traded goods and services sector. Substantial depreciations of the Australian dollar in 1985 and 1986 provided an important opportunity to boost manufacturing. However, import substitution has been slow, partly due to the erosion of the manufacturing base over the last one and a half decades, and the non-competitive nature of many of Australia's imports. While there have been some signs of exports increasing in response to the devaluation, further large increases in this area will require considerable investment in plant and equipment.

Neither industry nor government expect the increased price competitiveness that has stemmed from the depreciation to be effective, on its own, in bringing about a revitalised manufacturing sector. Approaches and policies which emphasise non-price factors such as quality and marketing are now in evidence and will play an important role.

Recognition of Australia's changing circumstances and the imperative of restructuring the economy has changed industry policy from its former defensive role of reliance on protection against imports to a more positive, catalytic role in renewing the sector. Today's policies seek to deal with root causes of lack of competitiveness (such as outdated technology) rather than its symptom (loss of market share). This is reflected by positive assistance measures such as information and marketing services, programs sponsoring private research and development, and corporate taxation reform.

TOWARDS 2000: THE PROSPECT FOR MANUFACTURING

The future of manufacturing will be determined by a host of factors, many of them inter-related. Government policy will continue to play a significant influence, both in the creation of the economic environment in which business operates, and in specific industry policies. There is large public sector involvement in important economic spheres such as transport, energy, communications and education, and the future of Australian manufacturing will very much depend on the efficient and effective delivery of these services. The extent to which industry adapts to the rapidly changing technological environment, and its ability to recognise and respond to the exigencies of both domestic and international markets, will determine its capacity to achieve international competitiveness.

Industrialisation of Asian countries and the prospect that they will become highly competitive suppliers of an increasing range of goods, implies that a much higher proportion of Australian manufactured products will come under challenge. However, with its large population and rising income, Asia should generate increased demand for Australian products which are internationally competitive.

The availability of capital to finance greater investment will also be important to the growth of the manufacturing industry. The recent deregulation of capital markets, in tandem with government-sponsored venture capital schemes, is expected to diversify the range of finance available for potentially profitable investments.

The Australian manufacturing sector will continue to face pressures for change. Its ability to respond to these pressures will determine its future contribution to economic growth.
